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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,580	08/02/2001	Norishisa Okada	648.40365X00	6329

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EXAMINER

MUSSER, BARBARA J

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/890,580

Applicant(s)

OKADA ET AL.

Examiner

Barbara J. Musser

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-31 is/are pending in the application.
- 4a) Of the above claim(s) 15-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-14 and 27-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palfey et al. in view of Banks et al.(U.S. Patent 6,036,802).

Palfey et al. discloses forming a bent laminate for specialized vehicles by bending a foam core and inner panel in a direction and then bending the outer panel in the same direction so it forms the outer layer and attaching it to the core via adhesive. It also discloses it is known in the art to bend a core and a second panel in a direction and then attach a first panel as the inner layer.(Col. 1, ll. 11-17; Col. 2, ll. 8-12, 53-56; Figures 2-4) The reference teaches the formation of a smooth bent surface by bending the desired smooth surface without any materials attached to it in the bending region and then attaching the other materials. One in the art reading the reference as a whole would appreciate that the method of Palfey et al. could be used to form a smooth inner panel instead of a smooth outer panel by bending the inner panel alone rather than both the inner panel and the core and then bending the core and outer panel rather than the outer panel alone to meet the inner panel and that the desire for smooth inner panels is known in the art. The reference is silent as to the equipment used to bend the laminate. Banks et al. discloses an apparatus for forming a bend in a laminate for airplane

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interiors by holding one end of the laminate via vacuum while bending the other end.(Col. 1, ll. 45-51; Col. 7, ll. 10-48; Col. 9, ll. 64-65) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the apparatus of Banks et al. to bend the laminate of Palfey et al. since Palfey et al. is silent as to the equipment required and since Banks et al. is directed to form a bend in the same type of laminate structure particularly since Banks et al. discloses the apparatus can be used for foam core panels as well as honeycomb core.(Col. 3, ll. 65- Col. 4, ll. 2)

Regarding claims 13 and 14, one in the art would appreciate that when the panel is bent, the same amount of foam or other core must fit in a smaller space, i.e. within the bend, and therefore the core would be crushed against itself.

Regarding claim 14, while Banks et al. does not specifically disclose a honeycomb panel with foam in the cells, it does disclose a foam panel and a honeycomb panel and that the apparatus can be used for other types of commonly used panels.(Col. 7, ll. 65- Col. 8, ll. 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bend a honeycomb panel with foam in the cells since which is a well-known type of panel and since Banks et al. discloses the apparatus can be used for any type of panel.

3. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banks et al. in view of Palfey et al.

Banks et al. discloses an apparatus for forming a bend in a laminate for airplane interiors by holding one end of the laminate via vacuum while bending the other end.(Col. 1, ll. 45-51; Col. 7, ll. 10-48; Col. 9, ll. 64-65) A portion of the inner panel is

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heated to debond the adhesive and pulled from the laminate.(Abstract; Figures 19-21)

It does not disclose heating and pulling all of the inner panel from the bend to the edge of the panel. Palfey et al. teaches the formation of a smooth bent surface by bending the desired smooth surface without any other layers attached to it in the bending region and then attaching the other layers and discloses forming a bent laminate for specialized vehicles by bending a foam core and inner panel in a direction and then bending the second panel in the same direction so it forms the outer layer and attaching it to the core via adhesive to form an attractive surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to heat and remove the portion of the inner panel of Banks et al. extending from the bend to the edge and re-applying it after bending since this would form a more attractive appearance as desired by Banks et al.(Col. 1, ll. 21-24) since Palfey et al. discloses unbonding and rebonding a face sheet to form an attractive appearance to the panel.

Regarding claims 13 and 14, one in the art would appreciate that when the panel is bent, the same amount of foam or other core must fit in a smaller space, i.e. within the bend, and therefore the core would be crushed against itself.

Regarding claim 14, while Banks et al. does not specifically disclose a honeycomb panel with foam in the cells, it does disclose a foam panel and a honeycomb panel and that the apparatus can be used for other types of commonly used panels.(Col. 7, ll. 65- Col. 8, ll. 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bend a honeycomb panel with foam in the

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cells since which is a well-known type of panel and since Banks et al. discloses the apparatus can be used for any type of panel.

4. Claims 9, 10, and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Palfey et al. and Banks et al. or Banks et al. and Palfey et al. in view of Toshinori(JP0-295050) and Koss et al.(U.S. Patent 4,853,018)

Either Palfey et al. and Banks et al. or Banks et al. and Palfey et al. discloses as in the rejection of claims 11-14 above but neither reference discloses bending the inner panel by sucking it to an arc shaped second base which is rotated to form the bend.

Toshinori discloses bending a panel to a curve using an arc-shaped second base.(Figures 1-2) However, it discloses using a pressing device to force the sheet to the curve of the base rather than using vacuum to hold the panel against the base though it is noted the reference is directed to bending metal sheets, which clearly would be far more difficult to bend than paper or plastic. Koss et al. discloses using a curved base with a vacuum source to bend a panel.(Figures 6-9) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an arc-shaped base having a vacuum source as the bending mechanism for the inner panel since this would form the precise bending radius desired(Toshinori, Abstract) and since Koss et al. discloses it is known to use vacuum to bend a substrate and that vacuum use allows control of the entire surface being bent(Col. 2, ll. 9-12), and particularly since Banks et al. discloses it is known to use vacuum to move items.(Col. 7, ll. 10-48)

Regarding claims 9 and 30, Palfey et al. discloses using a roller which moves along the inner panel and presses in a direction perpendicular to the inner panel.(Figure

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17) While the reference does not specifically disclose using this roller to bend the layers, one in the art reading the reference as a whole would appreciate that this roller could also be used as the bending device.

Regarding claims 27 and 30, Palfey et al. discloses the adhesive is sprayed on both the panel and the core.(Col. 2, ll. 53-56)

Regarding claim 28, while Palfey et al. discloses applying the adhesive prior to joining the layers of the panel together, one in the art would appreciate that in the area which is to be bent and then bonded, the adhesive could be applied after the bending rather than before since that would prevent it from accidentally sticking to the core without using slip sheets.

Regarding claim 29, since the purpose of the combination is to make a smooth inner panel at the bend, one in the art would appreciate that the adhesive should not be in that location originally as otherwise the panel will crease in that location during bending.

Regarding claim 31, the base in Banks et al. is on the horizontal.(Figure 19)

### ***Response to Arguments***

5. Applicant's arguments filed 3/18/04 have been fully considered but they are not persuasive.

Regarding applicant's argument that the references do not teach an arc-shaped base to which the inner panel is sucked, Toshinori discloses bending a material using

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an arc-shaped base, and Koss et al. disclose using vacuum to bend a panel to a desired shape.

Regarding applicant's argument that the references do not disclose providing adhesive between the outer panel and the core, the references disclose the outer panel is bonded to the core. Therefore a bonding agent, e.g. adhesive, must be present.

Regarding applicant's argument that Palfey et al. does not disclose that the detached surface is bent to form a curve to which the remainder of the material is then bent and attached, Palfey et al. does disclose bending a surface and then bending the remainder of the material to the shape of the bent surface, but the first surface in the case of Palfey et al. is the core and first sheet rather than the first sheet alone. The primary difference between the references is which sheet the core is attached to during the bending operation. In Palfey et al. it is attached to the first sheet being bent while in applicant's claim it is attached to the second sheet being bent. Since the reference separates the second sheet so that the second sheet will form a smooth surface when re-attached and since Palfey et al. discloses it is known to form a smooth inner surface rather than a smooth outer surface, it would have been obvious to one of ordinary skill in the art at the time the invention was made to leave the core attached to the second sheet rather than bend it with the first since this would form a smooth inner surface rather than a smooth outer surface.

Regarding applicant's argument that Palfey et al. only discloses the bending of the inner panel and the core, Palfey et al. teaches a method of forming a smooth surface by bending the desired smooth surface separately from the layers which are to



be attached to it. This clearly suggests that when the inner panel is desired to be the smooth surface, it is bent separately from the layers which will be bonded to it.

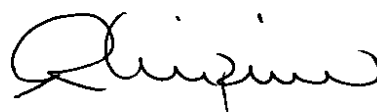
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is **(571) 272-1222**. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
BJM

  
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